Cleburn Street Well Superfund Site

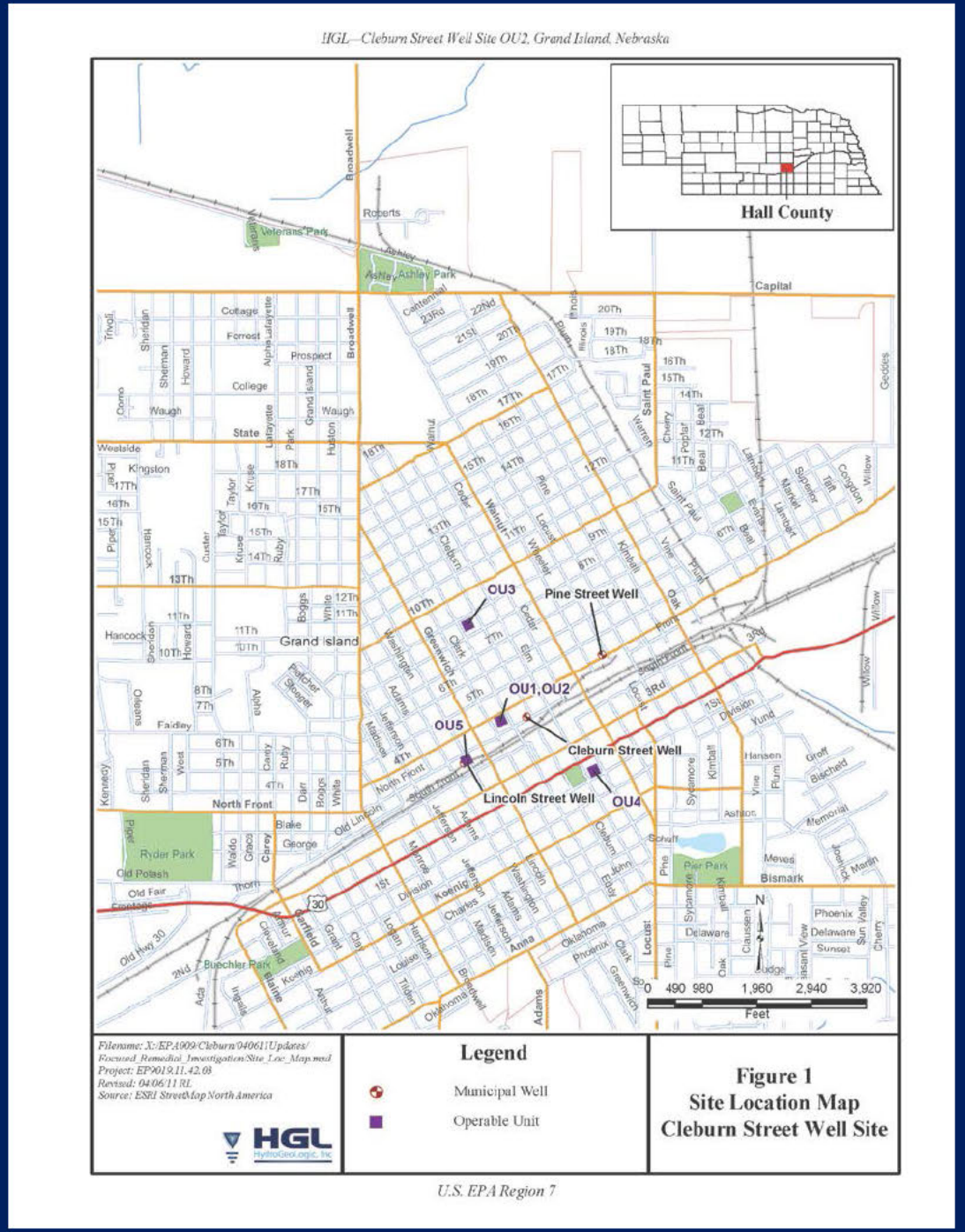
Grand Island, NE

Operable Unit 2

Region 7 – Priority Panel November 2014

Site Location Map
Grand Island, Hall County, NE

- ❑ OU 1 – Former One Hour Martinizing dry cleaners
- ❑ OU 2 – Former One Hour Martinizing dry cleaners
- ❑ OU 3 – Liberty Cleaners
- ❑ OU 4 – Ideal Cleaners
- ❑ OU 5 – Former Nebraska Solvent Company



Site History

- Mar. 1986 - PCE discovered in Cleburn Street Well
- Apr. 1986 – Cleburn Street well disconnected from water supply system
- Dec. 1987 – PA/SI completed
- Sep. 1991 – Proposal for NPL
- Oct. 1992 – Final on NPL
- Jun. 1996 – ROD issued for OUs 1, 2, 3 and 4
- Oct. 1999 – OU 1 and 2 remedies O&F
- Feb. 2000 – OU 1 O&M transferred to NDEQ
- Feb. 2000 – OU 2 enters LTRA

Site History Continued

- Sep. 2003 – First Five-Year Review completed
- Sep. 2006 – OU 1 SVE system shut down by NDEQ
- Nov. 2006 – OU 2 source area investigation
- Feb. 2007 – OU 1 SVE O&M complete
- Aug. 2007 – OU 2 GET system rehab conducted
- May 2008 – OU 2 hydrogeologic investigation
- Aug. 2008 – Second Five-Year Review completed
- Apr. 2009 – OU 2 evaluation of the silt layer

Site History Continued

- Jul. – Sep. 2009 – OU 2 ISCO pilot study for downgradient plume
- Dec. 2009 – Jul. 2010 – OU 2 ISCO pilot study for source area
- May 2010 – OU 1 time-critical soil removal action
- Mar. 2012 – OU 2 Focused RI/FS complete
- Sep. 2012 – ROD Amendment issued
- Feb. 2014 – VI mitigation unit installed in church
- Present – RD for in situ thermal treatment system ongoing

Cleburn Street Well Site Remedy Overview

- 1996 ROD Issued (OUs 1, 2, 3 and 4)
- OUs 1 and 2 – Former One Hour Martinizing (OHM) dry cleaning facility
  - OU 1 – source area soils/Soil Vapor Extraction
  - OU 2 – groundwater/Groundwater Extraction and Treatment
  - Former OHM – Currently used as church and automotive shop
- OU 3 – Liberty Cleaners - MNA
- OU 4 – Ideal Cleaners - MNA
- Institutional Controls to restrict groundwater use
- PCE is the main COC.

Cleburn Street Well Site Overview Cont…

- In 2006, the EPA began additional investigation activities due to the continued presence of elevated PCE concentrations at the former OHM dry cleaning facility source area, OU 2.
- Focused RI/FS completed March 2012.
- Focused RI determined majority of the contamination is bound up in a silt/silty sand layer beneath the OHM facility, approx. 24 ft. – 39 ft. bgs. GET would not remediate/restore groundwater to MCLs.
- ROD Amendment issued September 2012.
- Amended Remedy includes the following:
  - In situ thermal remediation of the source area (Innovative technology);
  - In situ chemical and/or enhanced biological remediation for the plume; and
  - Periodic groundwater and vapor intrusion monitoring.

OHM System Operational History

- OU 1 – SVE System
  - O&F in October 1999.
  - SVE system transferred to NDEQ in February 2000.
  - NDEQ operated system until September 2006, it was shut down based on soil vapor concentrations reaching asymptotic levels.
  - SVE system is not currently running. A mitigation unit was installed in February 2014 to mitigate VI within the church.
- OU 2 – GET System
  - O&F in October 1999.
  - LTRA began February 2000, GET system was never transferred to NDEQ.
  - EPA shut down in December 2009 to conduct an ISCO pilot study.
  - GET system has not been operated since December 2009.

Criteria #1 – Risks to Human Population Exposed

- Toxicity
  - PCE – Likely to be carcinogenic to humans by all routes of exposure.
  - TCE – Carcinogenic to humans by all routes of exposure.
    - Low noncancer screening level for indoor air

- Indoor Air – Approximately 75 church members, residents and commercial workers could be impacted by site contaminants via vapor intrusion.

Criteria #2 – Site/Contaminant Stability

- Contaminant plume impacted three municipal wells which were connected to the distribution system that provided drinking water to approx. 40,000 residents. The Cleburn Street, Pine Street and Lincoln Street wells have been taken offline.

- Plume will migrate outside of the city ordinance boundaries if not addressed.

- Migrating plume could continue to cause vapor intrusion issues for nearby/downgradient residents and commercial workers.

Criteria #3 - Contaminant Characteristics

- OHM Source Area Soils Maximum
  - PCE = 100,000 µg/kg
  - Site specific cleanup level to protect groundwater – 890 µg/kg
  - Will continue to contaminate groundwater if not addressed

- OHM Source Area Groundwater Maximum
  - PCE = 140,000 µg/L
  - Cleanup level is the MCL of 5 µg/L

Criteria #3 - Contaminant Characteristics Continued

- OHM Indoor Air Maximum (Church)
  - PCE – 89 µg/m³
    - RSL – 11 µg/m³ (10-6 residential carcinogenic)
    - RSL – 42 µg/m³ (10-5 residential noncancer)
  - TCE – 1.6 µg/m³
    - RSL – 0.48 µg/m³ (10-6 residential)
    - RSL – 2.1 µg/m3 (10-5 residential noncancer)
- OHM Sub-slab Air Maximum (Church)
  - PCE – 220,000 µg/m³
  - TCE – 520 µg/m³

Criteria #4 – Threat to Significant Environment

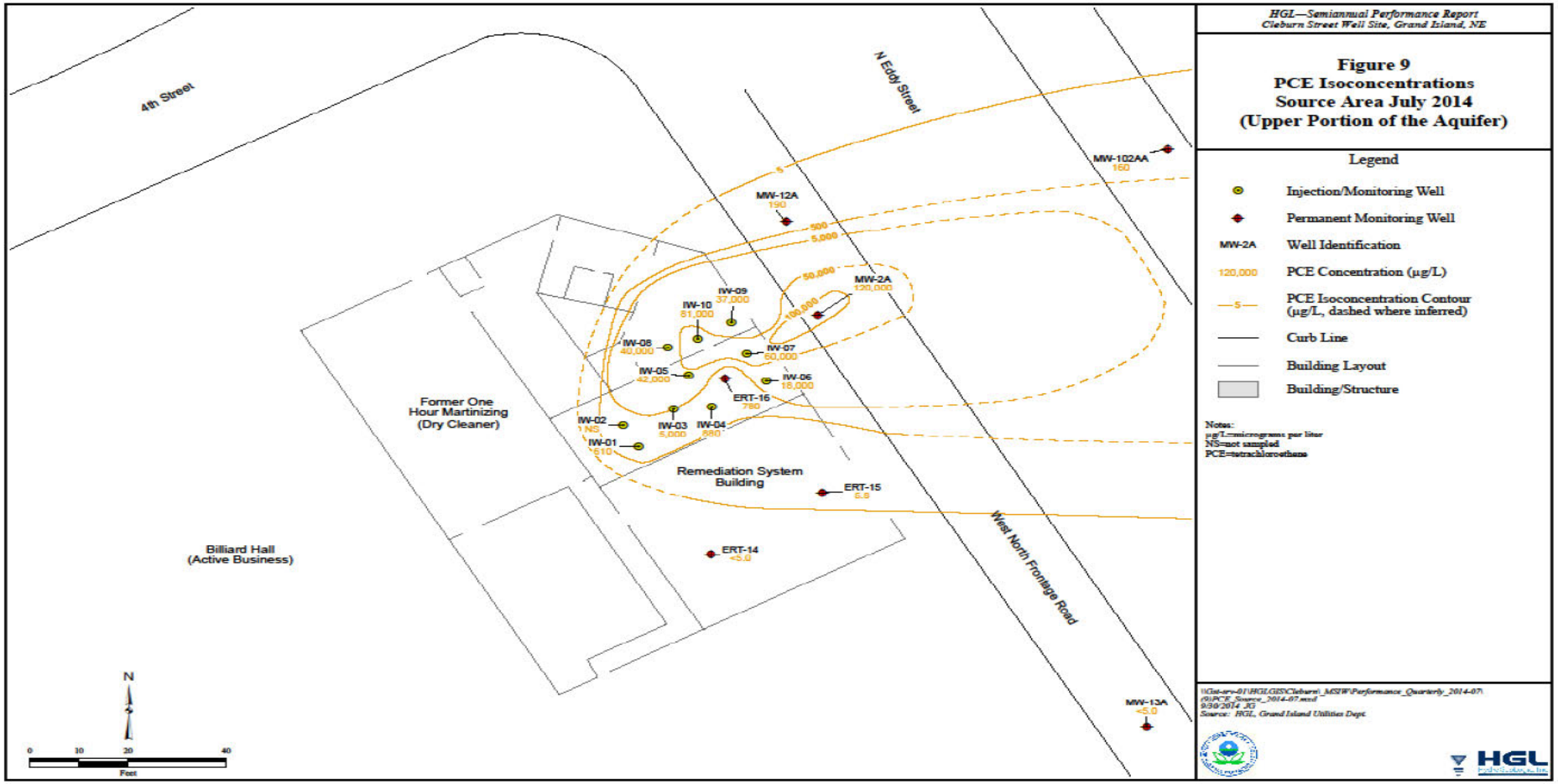
- There is no documented observation or prediction of an ecological impact at this Site.

- Natural attenuation of the PCE plume is occurring based primarily on the presence of degradation products. It is suspected that this was accelerated by the 2009/2010 ISCO pilot study; however, the rate of natural attenuation is not sufficient to remediate the plume within a reasonable time frame.

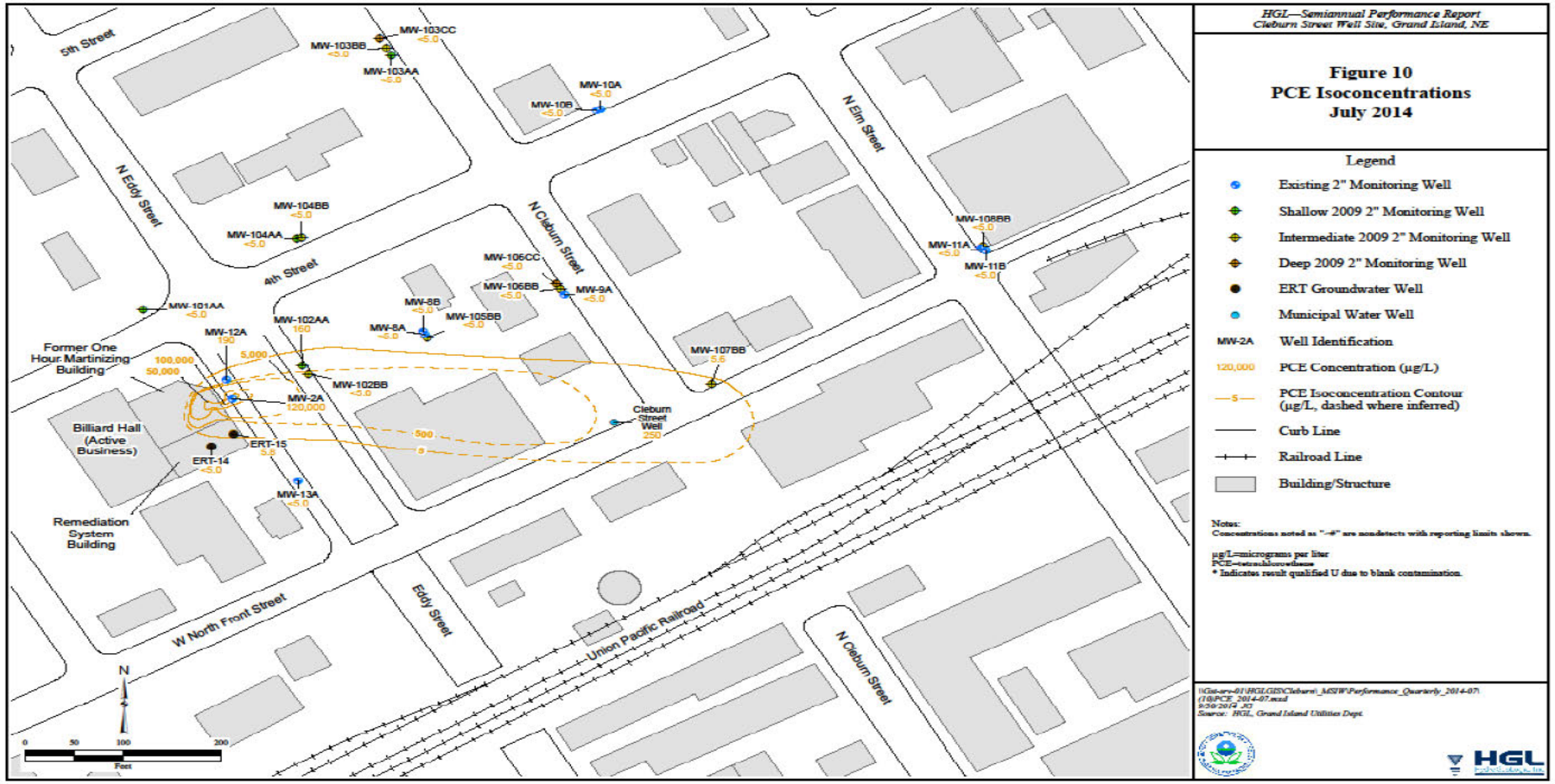
Criteria #5 – Programmatic Considerations

- ❑ September 2012 ROD Amendment for OU 2
  - Temporary relocation of occupants, if necessary
  - In situ thermal remediation (Innovative technology) of the source area contaminants
  - Performance monitoring (Groundwater and Vapor Intrusion)
  - In situ chemical and/or enhanced biological remediation of the downgradient plume
- ❑ Implementation of September 2012 ROD Amendment remedy will:
  - Reduce groundwater remediation timeframe to less than 15 years
  - Alleviate indoor air concerns in properties located above and near the contaminant plume
  - NDEQ and community supportive of the remedy
- ❑ Site has already achieved construction completion
- ❑ GET system was never transferred to NDEQ

Source Area Groundwater Concentrations July 2014



Plume Groundwater Concentrations July 2014



RA Funding Request

Fiscal Year	Fund Request ($)	Response Actions
2015	3,000,000	Thermal system installation and operation
2016	506,000	Performance monitoring
2017	820,987	Injection event and monitoring
2018	564,000	Injection event and monitoring
2019	391,000	Injection event and monitoring
2020	391,000	Injection event and monitoring
2021	272,000	Injection event and monitoring
2022-2030	122,000	Monitoring
Total Cost	6,920,987	